



## Ethnobotany of indigenous plants in Khandesh region (Maharashtra: India)

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### Abstract

Indigenous culture of a region or human society is reflected in its plantlore. Plants have been an integral part of materialistic and spiritual life in India. Khandesh region of Maharashtra State (India) is not different from this scenario. These present Authors inventorised worships performed in temples and surveyed plants grown in temple yards. This attempt revealed 33 indigenous species belonging to 29 genera and angiospermic families. Dicotyledonous taxa (32 species) however, share maximum contribution as compared to the monocotyledons (01 species). Trees constitute a major bioresource. These taxa have been found useful for sacred purposes, apart from medicinal and miscellaneous ones. Plant species employed for various worships and cultivated in temple yards are thereby conserved and also ameliorate the local environment. Studies in such edifices are few and far between. It, therefore, appears worth to extend ethnobotanical inventory in sacred places and also pilgrim centres.

**Keywords:** sacred plants, worship, khandesh, plantlore

### Introduction

Plants have an omnipresent role in human societies worldwide. Throughout the history of human-beings, plants have been the dominant source for their sustenance. Mankind utilised plants for concrete uses as well as abstract ones. Plants fulfilled demand of a wide range of rituals, rites, worships, customs and such other socio-religious purposes. The present authors inventorised sacred plants especially associated with the temple yards of tribals, rural people and urban elites. Information with respect to concrete and abstract uses has been obtained from the informants. Informants of all tribes, rural and urban people provided an unmatched volume of use-reports. Use-reports pertaining to exotic species are reported earlier (Khare *et al.*, 2020) [3]. These are being presented in this communication with particular emphasis on indigenous plant species in Khandesh region of Maharashtra (India).

### Methodology

Ethnobotanical inventory was conducted in Khandesh region of Maharashtra which is comprised of three districts viz., Jalgaon, Dhule and Nandurber. This region is situated in the northern part of Maharashtra state and also form state boundaries with Gujarat and Madhya Pradesh on north-western side. The region is studded with tribes such as Pawara, Bhil, Mavachi, Tadwi, etc., apart from rural folks and urban people. To tap down indigenous knowledge especially of the plant species grown or found in temple yards. Informants were mostly Pujari, men associated with the trust and temples. They were interviewed in all seasons during 2013 to 2017 years. Plant samples were deciphered botanically using various relevant floras (Patil, 2003; Kshirsagar and Patil, 2008; Naik, 1998; Cooke, 1958; Sharma *et al.*, 1996; Singh *et al.*, 2000, 2001) [9, 4, 1, 11, 12, 13].

Data obtained is presented in the Table-I under the headings viz. sacred aspect, medicine and miscellaneous use-reports.

### Results and Discussion

Plants influenced profoundly the culture and civilization of mankind worldwide. Plants are of the ancient associates of been man and see intricately entwined with every aspect of life. Apart from their concrete relationships, they also find place in abstract relationships since the appearance of man on the earth. India was covered with dense, virgin and primaevael forests and Indian cultures flourished in the midst of such forest cover. Plants are deeply associated with myths, belief and legends (Patil, 2020) [10]. Plant worship is one of man's manifestations in tribal as well as civilized societies. The present authors tapped down his association with plants as occurring in the temple yards of Khandesh region which has its own distinctive culture.

### Diversity of Sacred Plants

Our inventory of sacred plants associated with the worships and temple yards in this region divulged several plant species, a segment of some indigenous species with specific emphasis on fruits, seeds and flowers is presented in the Table-I. As many as 33 indigenous species belonging to 29 genera and 22 families of angiosperms. Of these, the dicotyledones share maximum contribution (32 species, 28 genera and 21 families), whereas the monocotyledons are poorly represented (01 species, 01 genera and, 01family). Their status regarding wild or cultivated is interesting. They share equally (15 cultigens and 15 wild ones). Only one species is found either as cultivated or run wild in the area (*Emblca officinalis* Gaertn.). It is further worth to note that trees have played a major role (21 species). Others have shared few ones as such climbers (06), herbs (04) and

shrubs (02). The figures in the parenthesis denote number of species. It is notable that perennial sources like trees are favoured in worships and plantation in the temple yards.

**Table 1:** Sacred Plant Species of Khandesh.

Sr. No.	Plant Species & Family	Local Name	Use-Reports
1.	<i>Abrus precatorius</i> L. Papilionaceae	Gunj, Ratti	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>Rosary of the seeds tied on the hand if a person obstructed by evil spirit.</li> <li>The tribal beliefs are the seeds are used for black magic in many regions by the tribals.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>A teaspoon powder of seeds is used once daily for blood purification for a weak.</li> </ol> <p>Miscellaneous Uses:</p> <ol style="list-style-type: none"> <li>Seeds are kept in to the house to prevent entry from snakes.</li> </ol>
2.	<i>Acacia ferruginea</i> DC. Mimosaceae	Devbhabul	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>Inflorescence is used in the worship of Gramdevta by the tribals.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Paste of the flowers is rubbed on the head to treat headache.</li> </ol>
3.	<i>Aegle marmelos</i> (L.) Corr. Rutaceae	Belphal, Belmool, Bel.	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>Leaves and fruits are commonly used in the worship of God Mahadev by Hindus.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Pulp of fruit, about a teaspoon, is given once a day to check dysentery.</li> </ol>
4.	<i>Balanites aegyptiaca</i> (L.) Del. Balanitaca	Hinganbet	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Fruit pulp is applied on the pimples.</li> <li>Seed oil is applied on the burn and boils until cure.</li> </ol>
5.	<i>Boswellia serrata</i> Roxb. Bursaceae	Salayi.	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Paste of the flowers is used in the treatment of wounds and cuts.</li> <li>Seed powder is applied on the snake and scorpion sting.</li> </ol> <p>Miscellaneous Uses:</p> <ol style="list-style-type: none"> <li>Seed powder is used for good hair growth.</li> </ol>
6.	<i>Buchanania lanzan</i> Spreng. Anacardaceae	Charoli.	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Seed are consumed as a tonic.</li> </ol> <p>Miscellaneous Uses:</p> <ol style="list-style-type: none"> <li>Seed paste is applied on the pimples.</li> <li>Seed oil is typically used for smoothening skin.</li> </ol>
7.	<i>Butea monosperma</i> (Lam.) Taub. Papilionaceae	Palas, Dhak	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Floral paste is rubbed on the body for treatment of sunstroke.</li> <li>A cup of floral juice is recommended to cure menorrhagia.</li> </ol>
8.	<i>Cassia absus</i> L. Caesalpiaceae	Tarhotana- mama	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Flower paste is topically applied to remove pimples.</li> </ol>
9.	<i>Celastrus paniculata</i> Willd. Celastraceae	Jyotishmati, Malkangani	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Seed powder about half spoon is given orally in digestion problems.</li> <li>Oil obtained from seeds is given a teaspoon daily as brain tonic.</li> <li>Seeds oil is used for massage to reduced body ache.</li> <li>A cup of extract of seed is diluted with water and jaggery is added. It is prescribed, a teaspoon twice to thrice a day, to check of fever and cold.</li> </ol>
10.	<i>Cordia dichotoma</i> Forst. f. Boraginaceae	Bhokar	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Consuming of few fruits is recommended for lung complaints regularly.</li> <li>Fruit and leaf decoction is prescribed in the chest infection until cure. A teaspoon of it twice a day is advised for four days.</li> <li>Fruit pulp is applied topically on scabies.</li> </ol> <p>Miscellaneous Uses:</p> <ol style="list-style-type: none"> <li>The fruit is edible. Immature fruit is used for pickles.</li> </ol>
11.	<i>Cucumis melo</i> L. var. <i>melo</i> Cucurbitaceae	Kharbuj	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>Fruit is consumed on the days of fast.</li> <li>Akhaji (Akshaytrutiya) festival is celebrated in this region. Fruit of this plant is placed on a waterpot and worshiped.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>Fruits are consumed for avoiding the sunstroke.</li> </ol> <p>Miscellaneous Uses:</p>

			1. Unripe fruit pulp is applied on the face for overnight to increase glowing and smoothness of skin.
12.	<i>Cucumis sativus</i> L. Cucurbitaceae	Kakdi	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>1. Fruit is also offered to goddesses Parvati during Hartalika festival.</li> <li>2. Tribals celebrate Kakada Navay festival. They worships fruits of this plant and then start consuming them.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Slice of fresh fruit is placed on eyes for cooling.</li> </ol> <p>Miscellaneous Uses:</p> <ol style="list-style-type: none"> <li>1. Fruit pulp is applied on skin for softness and shining.</li> </ol>
13.	<i>Diospyros melanoxylon</i> Roxb. Ebenaceae	Temburni	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>1. Fruit is used in worship of Gramdevta.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Pulp of ripe fruits is consumed. It is beneficial to check dysentery and diarrhoea until cure.</li> <li>2. Unripe fruit is used as an antidote on snake bite.</li> </ol>
14.	<i>Diospyros montana</i> Roxb. Ebenaceae	Pali	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Floral paste is topically applied to treat ringworm and insect bites.</li> </ol>
15.	<i>Dolichandrone falcata</i> (Wall.ex DC.) Seem. Bignoniaceae	Medshing, Marshing.	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>1. White fragment flowers are used in the worship local dieties.</li> </ol>
16.	<i>Emblica officinalis</i> Gaerth. Euphorbiaceae	Avla	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Dried fruits powder, about spoonful, is taken before meal for digestion.</li> <li>2. Fruits are consumed to overcome the gum afflictions.</li> <li>3. Fruit juice is advised every night, about a glass, to the pregnant lady to increase blood.</li> </ol> <p>Miscellaneous Uses:</p> <ol style="list-style-type: none"> <li>1. Dried fruit paste is applied on the scalp in the case of hair fall and used as natural hair conditioner.</li> </ol>
17.	<i>Ficus racemosa</i> L. Moraceae	Umbar, Audumbar	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>1. Fruit is edible and used in the worship of Gurudatta.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. A cup of fruit decoction is diluted with a glass water. A teaspoon sugar is added in it and advised in the treatment of stomach-ache.</li> <li>2. Three teaspoonful of fruit extract is taken, twice a day, for controlling the blood sugar in diabetes.</li> </ol>
18.	<i>Ficus religiosa</i> L. Moraceae	Pimpal.	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Fruits are edible and their consumption enhance digestive capacity.</li> </ol>
19.	<i>Flacourtia indica</i> (Burm. f.) Merr. Flacourtiaceae	Atrun	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Four to five fruit daily eaten to cure jaundice</li> </ol>
20.	<i>Helicteres isora</i> L. Sterculiaceae	Murudsheng.	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. A cup of fruit extract is diluted with water, ginger and a teaspoon honey is added in it. This is advised two teaspoon, twice a day, in the treatment of cold until cures.</li> <li>2. Crushed fruits are heated with edible oil. They are strained and used as an ear drop also for earache.</li> </ol>
21.	<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall. ex G. Don Apocynaceae	Dahikudi.	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>1. Flowers are used for decoration purpose in the auspicious ceremonies and festivals.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Seed powder is mixed in a glass water and a pinch of sugar is mixed in it. It is advised for better digestion at every night for a month.</li> </ol>
22.	<i>Ipomoea nil</i> (L.) Roth Convolvulaceae	Nil-pushpa.	<p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Two teaspoon seed powder is diluted with a cup boiled water. It is prescribed, two teaspoon thrice a day, in the treatment of cough and fever.</li> </ol>
23.	<i>Jasminum officinale</i> L. Oleaceae	Chameli.	<p>Sacred Aspect:</p> <ol style="list-style-type: none"> <li>1. Flowers are used in the worship of local deity.</li> </ol> <p>Medicinal Uses:</p> <ol style="list-style-type: none"> <li>1. Two spoonful of decoction of flower is diluted in half cup of boiled milk or tea</li> </ol>

			and recommended in the treatment of fever for four days. Miscellaneous Uses: Flower extract is used as perfume.
24.	<i>Limonia acidissima</i> L. Rutaceae	Kavath.	Sacred Aspect: 1. Cutting of fruit is prohibited at the night because it is believed that the evil spirits rest at night on this tree. 2. Fruit is used in the worship of 'Anant puja' in the month of Shravana by the Hindus. Medicinal Uses: 1. A cup of decoction of fruit is diluted with a cup boiled water. A pinch of common salt is mixed in it. It is recommended, half cup twice a day in the treatment of dysentery. 2. Consumption of fruit is beneficial in digestion problems.
25.	<i>Mallotus philippensis</i> (Lamk.) Muell.-Arg. Euphorbiaceae	Shendri.	Sacred Aspect: 1. Dye obtained from the fruit hairs is used as 'Kumku' or 'Kumkum' on forehead by married women. Medicinal Uses: 1. A cup of fruit extract is prescribed, two teaspoon thrice a day, in the treatment of dysentery until cure. 2. Seed paste is topically applied on various herpes and ringworm and Seed paste is applied in rheumatic pains. 3. Decoction of seed is also used topically on snake bite. 4. Fruit extract is applied on boils and cuts.
26.	<i>Mangifera indica</i> L. Anacardiaceae	Amba.	Sacred Aspect: 1. Fruit is used in worship of Vat Savitri puja. 2. Fruit juice is used for food offering to god as Naivaidya. 3. Fruit juice is an important in auspicious ceremonies or festivals.
27.	<i>Michelia champaca</i> L. Magnoliaceae	Sonchapha.	Sacred Aspect: 1. Flowers are used in worship of Hindu Gods viz., Lord Mahadev and Lord Vishnu. 2. Flowers are used as garlands purposes on auspicious ceremony by Hindu women. 3. Perfume of flower is used for fragrance in temples. Medicinal Uses: 1. Oil obtained from flowers is used for rheumatic joint pains.
28.	<i>Momordica dioica</i> Roxb. ex Willd. Cucurbitaceae	Kartoli, Katurle.	Medicinal Uses: 1. Fruit paste is topically applied on the swellings for relief. Miscellaneous Uses: 1. Fruit is used in regular diet as a vegetable.
29.	<i>Musa paradisiaca</i> L. Musaceae	Kel.	Sacred Aspect: 1. Fruits of the plant are used as the most important ingredient of worship. 2. Fruit is consumed as fast food. 3. Flowers are used in the worship of God Mahadev in Mahashivratri and Hartalika festival Medicinal Uses: 1. Eating of the fruit is recommended in case of dysentery to avoid the dehydration.
30.	<i>Nelumbo nucifera</i> Gaertn. Nymphaeaceae	Kamal	Sacred Aspect: 1. Flower is thought abode of Laxmi, a goddess of wealth. 2. Flower used in the worship of Laxmi at Laxmipujan during Diwali festival. Medicinal Uses: 1. A cup of decoction of seeds and two teaspoon honey is prescribed at morning and evening as a health tonic. Miscellaneous Uses: 1. Thalamus is used as a vegetable. 2. Stalks of the flowers are used as salad or vegetable.
31.	<i>Nyctanthes arbour-tristis</i> L. Oleaceae	Parijat	Sacred Aspect: 1. Flowers are used in various worship. 2. Flowers are used in decoration in auspicious ceremony, marriages and festivals. 3. Flowers are also used as flower garland for women in festivals and auspicious ceremonies.

			Medicinal Uses: 1. Paste of the flowers is used to treat burns and skin reddening.
32.	<i>Nymphaea pubescens</i> Willd. Nymphaeaceae	Kamal	Sacred Aspect: 1. Flowers used in the worship of god Ganesh at Padmalaya temple. 2. Flower is used in the worship of Laxmi at Laxmipujan festival. 3. Flowers are used for worshipping Yahamogi mata (Tribal) and Mahadeva, a Hindu god.
33.	<i>Pongamia pinnata</i> (L.) Pierre. Papilionaceae	Karanj	Sacred Aspect: 1. Flowers are used in worship of Gramdevta on a Bhandara occasion. Medicinal Uses: 1. Decoction of fruits diluted with two cup of boiled water, jaggery, a pinch of common salt and little ginger ( <i>Zingiber officinale</i> Rosc.) paste is recommended. Three teaspoons are used, thrice a day, in the treatment of cough until cure. 2. Seed oil is topically applied on scabies, swelling and rheumatism. 3. Seed oil, two drops thrice a day, are poured in ears to check ear infection.

### 1. Role Plant parts

This attempt focussed specifically fruits, seeds and flowers. Enquiry was made about their relationship with the people concerned. Their role is analysed part-wise. They played a role as sacred, medicinal and miscellaneous sources. Importance of fruits, seeds and flowers appeared in this descending order.

#### a. Fruits as Offerings

As many as 09 species belonging to 08 genera and 08 families are employed for various purposes such as: (a) worship of Lord Mahadeva, (b) festival like Akhaji, (c) worship of local deities (Gramdevta), (d) Worship of Gurudatta, (e) Anant puja, (f) vatsavriti puja, (g) fasts, (h) Hartalika, (i) Kakada Naway (tribal festival) and as (j) Kumbum on forehead of a married women. There is a taboo about fruit of *Limonia acidissima* L. which is prohibited to cut at night.

#### b. Fruits as Medicine

Total 16 species pertaining to 14 genera and 11 families are useful. They are useful to combat various human sufferings, such as: (a) dysentery, (b) diarrhoea, (c) pimples, (d) lung and chest complaints, (e) sunstroke, (f) eye burning (g) snake bite, (h) digestive complaints, (i) gum troubles, (j) ear-ache, (k) stomach-cache, (l) jaundice, (m) cold, (n) boils and cuts, (o) swellings, (p) cough, (q) to treat dehydration and (r) blood increase, etc.

#### c. Miscellaneous Uses

Some fruits are edible and also pickled. In few cases, they are employed for softening and shining of skin, against hair-fall, as hair-conditioner and as vegetable.

### 2. Role of Seeds

#### a. Seeds as Belief

Seeds of *Abrus precatorius* L. are made into rosary and used against evil spirit and also for black magic by the tribal people.

#### b. Seeds as Medicine

Total 07 species belonging to 07 genera and 07 families are beneficial to treat human afflictions such as: (a) snake bite, (b) Scorpion-sting, (c) as tonic, (d) indigestion, (e) brain tonic, (f) fever, (g) cold, (h) cough, (i) ringworm, (j) rheumatic pains, (k) scabies, (l) ear infection, etc.

#### c. Miscellaneous Uses

They also benefit in hair-growth and smoothening skin.

### 3. Role of Flowers

#### a. Sacred Uses

Total 09 species pertaining to 09 genera and 09 families are found useful for sacred purposes such as: (a) worship of Gramdevta or local deity (b) decoration during festivals and auspicious occasions, (c) worship of Lord Mahadeva, (d) Laxmi puja, (e) garlands for woman, etc.

#### b. Medicine

Few flowers are employed to treat head-ache, sunstroke, menorrhagia and rheumatic joint pains.

#### c. Miscellaneous Uses

Flower stalk and thalamus of *Nelumbo nucifera* Gaertn. are used as vegetable. In a nutshell, it appeared from the above resume that devotees and residents of Khandesh have a treasure of knowledge about plants especially employed for sacred purposes and grown in temple yards. Many plant species are conceived as images of various deities and stand and symbols for them. Apart from abstract uses, they are quite aware about their medicine and miscellaneous applications for their sustenance. It is also worth to note that plant species associated with temples and worships are thereby conserved. Recent studies in India also reinstated such a view (Mohanty *et al.*, 1997; 2012; Pande *et al.*, 2014; Dadhich and Dwivedi, 2017) <sup>[5, 6, 2]</sup>. They also ameliorate environment locally. The indigenous culture is reflected by these species and are an integral part of motive people.

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